Attorney Docket No. 03665/LH

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s)	:	Mitsuru ARAI et al
Serial No.	:	10/699,809
Confirm. No.	:	4459
Filed	:	November 3, 2003
For	:	VOLUME CONTROL APPARATUS OF RADIAL PISTON PUMP OR MOTOR AND POSITIONING APPARATUS
Art Unit	:	3746
Examiner	:	Leonard J. Weinstein

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

S I R :

Review of the Final Rejection in the above-identified application is respectfully requested. No amendments are being filed with this request, and this request is being timely filed with a Notice of Appeal.

A Final Rejection was issued on July 20, 2007, and an Advisory Action was mailed on July 27, 2007. This Pre-Appeal Brief Request for Review is being filed to request review of, in particular, the rejection under 35 USC 102 of independent claims 5 and 8 in view of USP 4,077,745 ("Rometsch et al") and the rejection under 35 USC 102 of independent claim 5 in view of USP 4,652,215 ("Kuroyanagi et al").

This review is requested for the reasons set forth on the following five pages of explanation.

REMARKS

It is well established that "'A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.' *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)" (MPEP 2131.01). As explained in more detail below, Rometsch et al does not disclose "a control valve which is built-in the servo piston, and which controls inflow and outflow of oil in the oil chamber..." as recited in independent claims 5 and 8. In addition, as explained in more detail below Kuroyanagi et al does not disclose "a control valve which is built-in the servo piston, and which controls inflow and outflow of oil in the oil chamber..." as recited in independent claims 5 and 8. Accordingly, it is respectfully submitted that neither Rometsch et al nor Kuroyanagi et al anticipates independent claim 5 or independent claim 8. For this reason, it is respectfully requested that this panel withdraw the rejection of independent claims 5 and 8 and all of the claims respectively depending therefrom.

For the subject matter recited in claims 5 and 8, the panel is respectfully referred to the listing of claims set forth in the Amendment filed on February 13, 2007, and to pages 2 and 3 of the Response filed on July 6, 2007.

Re: Rometsch et al

First, with respect to Rometsch et al, it is respectfully pointed out that according to the present invention as recited in independent claims 5 and 8, the control valve controls both inflow and outflow of oil in the oil chamber. By contrast, as explained at page 3, line 12 to page 4, line 4 of the Response filed on July 6, 2007, Rometsch et al merely discloses at column 3, lines 53-65 an element 40 which controls outflow (but not inflow) of fluid from the chamber 35.

Significantly, element 40 of Rometsch et al is urged against a seat 39 by a spring 41 to close hole 38 until fluid under pressure forces the element 40 away from seat 39/hole 38, so that fluid under pressure is allowed to flow through tube 42, small bore 45, and large bore 46 to the pressure relief pocket 22. See Fig. 2 and column 3, lines 1-15 and 53-68 of Rometsch et al.

In the Advisory Action, the Examiner appears to recognize that element 40 of Rometsch et al acts only as "a pressure-limiting valve" (claim 1 of Rometsch et al), but the Examiner also asserts that at the time that element 40 prevents outflow of fluid, element 40 also prevents inflow of fluid, because the chamber is pressurized. See the continuation sheet of the Advisory Action.

It is respectfully pointed out, however, that Rometsch et al does not describe a steady-state in which there is no inflow and no outflow of fluid from the chamber. Instead, Rometsch et al merely discloses that the element 40 closes the chamber while fluid pressure builds. Once the fluid pressure has reacted a limit, the element 40 allows outflow of fluid. Thus, it is respectfully submitted that element 40 of Rometsch et al merely prevents outflow of fluid from the chamber while fluid is flowing into the chamber, and then permits outflow of fluid. In other words, it is respectfully submitted that in Rometsch et al, fluid is fed behind the piston until the pressure reaches a certain point, and then "pressure-limiting valve" permits outflow of fluid "so that the pressure behind the small piston no longer raises." See the bottom of column 1 and top of column 2 of Rometsch et al. Contrary to the Examiner's assertion on the continuation sheet of the Advisory Action, therefore, it is respectfully submitted that element 40 of Rometsch et al merely controls outflow of fluid.

Accordingly, it is respectfully submitted that Rometsch et al does not disclose a control valve which controls both inflow and outflow of oil in an oil chamber, and it is therefore respectfully submitted that Rometsch et al cannot anticipate independent claims 5 and 8.

Re: Kuroyanagi et al

With respect to Kuroynagi et al, it is respectfully pointed out that according to independent claim 5, a control valve is provided which is built-in the servo piston, and which controls inflow and outflow of oil in the oil chamber, and which is positioned by applying a volume control pressure thereto. As explained at page 4, line 5 to page 7, line 11 of the Response filed on July 6, 2007, Kuroyanagi et al clearly does not disclose this feature recited in claim 5. (Independent claim 8 has not been rejected in view of Kuroyanagi et al.)

Kuroyanagi et al discloses a second piston 60 which supports a roller 61 and which is slidably held in a second cylinder 68. The roller 61 is urged towards an outer ring 4b by spring 60 held between the piston 60 and a cap 63. A second control chamber 65 is defined by the piston 60, the cylinder 68 and the cap 63, and is connected to a chamber 70 by a port 66. The chamber 70 is connected with a suction connecting path 17. See column 4, lines 20-32 of Kuroynagi et al. The initial position of the cam ring is determined by the force of the spring 64, along with another spring 54 on the other side (Fig. 2). During operation, the second chamber is under suction pressure (i.e., due to port 66), which causes the ring 4 to move to the left in Fig. 2 (see the bottom of column 4 and top of column 5 of Kuroyanagi et al).

Thus, Kuroyanagi et al clearly does not disclose a control valve built-in the second piston 60 to control inflow and outflow of oil in an oil chamber, wherein the piston is driven in accordance with a driving pressure in the oil chamber.

In the Advisory Action, the Examiner asserts that Kuroyanagi et al discloses a "piston" that is not the piston 60, but rather includes the piston 60 and the structures between the piston 60 and the cap 30. This interpretation of a "piston" is necessary to support the rejection, because according to the Examiner, the spring 64, which is held between the piston 60 and the cap 30 (i.e., that is not built-in the piston 60) and the control chamber 65, which is defined by the second piston 60, the second cylinder 70 and the cap 30 (i.e., that is not built-in the piston 60) correspond to the control valve recited in claim 5 (which is built-in the servo piston).

It is noted that during examination, the claims must be "given their broadest reasonable interpretation consistent with the specification" (*Philips v. AWH Corp.* 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2006) (see MPEP 2111). According to MPEP 2111.01, "This means that the words of the claim must be given their plain meaning unless the plain meaning is inconsistent with the specification."

It is respectfully submitted that a "piston" would ordinarily mean a part (e.g., cylindrical) that fits and moves within a cylinder (such a definition can be obtained from various dictionaries such as from www.dictionary.com). Kuroyanagi et al discloses that a piston is slidably provided

in a cylinder ("a second piston 60...slidably held in a second cylinder 68"). Moreover, the present specification discloses that the servo piston 8 is slidable in a case (page 11, line 1). And claim 5 recites that the servo piston "presses the cam ring" and "is driven in accordance with a driving pressure in the oil chamber."

It is respectfully submitted, therefore, that a definition of "piston" that includes not just the piston 60 of Kuroyanagi et al, but also structures exterior to the piston 60 that do not slide within the cylinder 68, is not a reasonable definition of "piston." That is, the Examiner's proposed definition of "piston" includes a surface of cap 30 to which the spring 64 is fixed, and which partially defines the control chamber 65. It is respectfully pointed out that the cap 30 does not slide in cylinder 68 with the piston 60 and cannot reasonably be considered part of a piston. Indeed, Kuroyanagi et al itself defines the "piston" as element 60, and Kuroyanagi et al itself refers to spring 64 and control chamber 65 as being external to the piston 60. See column 4, lines 20-29.

It is respectfully submitted, therefore, that even if spring 64 and chamber 65 could reasonably be interpreted as a "control valve," spring 64 and chamber 65 are clearly not "built-in" a piston in Kuroyanagi et al. See also page 4, line 15 to page 5, line 13 of the Response filed on July 6, 2007.

It is respectfully submitted, moreover, that spring 64 and chamber 65 of Kuroyanagi et al clearly cannot be consider a control valve as recited in claim 5.

As explained in the Response filed on July 6, 2007, a spring provided within a chamber does not reasonably accord with the plain meaning of the term "valve" and does not function in the manner of the control valve recited in independent claim 5. See the paragraph bridging pages 5 and 6, including footnote 1, of the Response filed on July 6, 2007.

In response, the Examiner asserts in the Advisory Action that spring 64 and control chamber 65 "permit a flow of fluid from a chamber ... 66."

It is respectfully pointed out, however, that merely "permit[ting]" the flow of fluid without any capability to halt or control the flow, is insufficient to establish spring 64 and control

chamber 65 as a "valve," since as pointed out in the Response filed on July 6, 2007, an ability to halt or control the flow of a fluid is integral to the definition of a "valve."

It is respectfully pointed out, moreover, that spring 64 and control chamber 65 do not exert control of the port 66 of Kuroyanagi et al. In fact, the opposite is true. That is, according to Kuroyanagi et al, suction is exerted through the port 66 on the control chamber 65 to control the position of the cam ring 4 to move toward the left in Fig. 2, essentially overriding the force exerted on the cam ring via the spring 64. See the paragraph bridging columns 4 and 5 of Kuroyanagi et al (in particular, "the second control chamber 65 is under suction pressure"), and see the disclosure at column 4, lines 26-32.

In summary, it is respectfully submitted that spring 64 and control chamber 65 of Kuroyanagi et al clearly are not a "control valve" as recited in claim 5 since these structures do not control the inflow or outflow of oil into the oil chamber as recited in claim 5. In addition, it is respectfully submitted that even if the spring 64 and chamber 65 of Kuroynagi et al were a "control valve," these structures are clearly not "built-in the servo piston" as recited in claim 5, if "piston" is reasonably defined. Therefore, it is respectfully submitted that Kuroyanagi et al cannot anticipate independent claim 5.

In view of the foregoing, it is respectfully requested that requested that the Pre-Appeal Brief Conference Panel withdraw the rejections of independent claims 5 and 8, claims 6 and 7 depending from claim 1, and claim 9 depending from claim 8.

Respectfully submitted,

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